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SHORT COMMUNICATION

EFFECT OF BRASSINOSTEROIDS ON SALINITY INDUCED GROWTH INHIBITION OF GROUNDNUT SEEDLINGS

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Effect of brassinosteroids (brassinolide, 24- epibrassinolide and 28- homobrassinolide) on salinity induced inhibiton of seedling growth of groundnut (*Arachis hypogaea* L.) were studied and were found to reverse the growth inhibitory effects of salinity stress.

Brassinosteroids are novel group of growth promoting substances (Mandava, 1988; Sakurai and Fujioka, 1993). In addition to growth promotion they are also involved in increasing tolerance to low and high temperature stresses in brome grass (Wilen *et al.*, 1995) and resistance to chilling injury in maize (He R-Y *et al.*, 1991) and rice (Wang and Zang, 1993) seedlings. They also offer better resistance to moisture stress as in case of sugarbeet (Schilling *et al.*, 1991) and wheat (Sairam, 1994) varieties. Present study was conducted to find out the effect of brassinosteroids on the salinity induced inhibition of seedling growth of groundnut.

Brassinolide, 24-epibrassinolide and 28-homobrassinolide were procured from M/s Beak Consultants Inc. Brampton, Ontario, Canada. Seeds of groundnut (*Arachis hypogaea* L. Var ICGS 44) were obtained from International Crop Research Institute for Semi-Arid Tropics, Patancheru, Hyderabad. Seeds were surface sterilized with 0.1% (w/v) mercuric chloride and were allowed to germinate at 20°C in dark in petriplates (15 cm in diameter) provided with sterile whatman No. 1 filter papers and distilled water. After 72 h of incubation five uniform size seedlings were transferred into each petriplate (15 cm in diameter) provided with whatman No. 1 filter papers. Each plate contained 10 ml of either of the solution: distilled water; 500 mM NaCl; 500 mM NaCl supplemented with 1μM/3μM brassinosteroids. The plates were kept at 20 ± 1°C in a dark room. On the 4th day (after transfer into test solution) 5 ml more test solution was added to the plates. Length and fresh weight of the seedlings were recorded on the 7th day. The seedlings were dried in oven at 110°C for 24 hours and dry weights were recorded.

All the three brassinosteroids employed, reversed the inhibitory effect of salinity on seedling growth (Table I). Brassinosteroids not only removed the inhibitory effect

Table I. Effect of brassinosteroids on seedling growth of *Arachis hypogaea* L.

Compound	Length (cm)	Fresh weight (g)	Dry weight (g)
Control (DW)	7.26 ± 0.32	1.93 ± 0.06	0.40 ± 0.03
500 mM NaCl	3.81 ± 0.15	1.55 ± 0.04	0.24 ± 0.01
500 mM NaCl + 1 μM brassinolide	6.35 ±0.07	2.23 ± 0.07	0.52 ± 0.03
500 mM NaCl + 3 μM brassinolide	6.05 ±0.17	2.22 ± 0.07	0.48 ± 0.01
500 mM NaCl + 1 μM 24-epibrassinolide	6.28 ±0.21	2.76 ± 0.09	0.47 ± 0.02
500 mM NaCl + 3 μM 24-epibrassinolide	5.94±0.15	2.25 ± 0.09	0.41 ± 0.02
500 mM NaCl + 1 μM 28-homobrassinolide	6.37 ±0.16	2.42 ± 0.07	0.41 ± 0.02
500 mM NaCl + 3 μM 28-homobrassinolide	6.02±0.17	2.24 ± 0.08	0.47 ± 0.02

of salinity, but also promoted the growth in terms of fresh and dry weight both. These findings clearly indicate that the brassinosteroids are able to counteract the salinity induced growth inhibition. However, further investigations are needed to elucidate the mechanism involved in the brassinosteroid influenced salt tolerance.

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